The risk of secondary poisoning with 1080 – a re-evaluation

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Although Compound 1080 (sodium monofluoroacetate) was registered for rodent control for many years in the United state, only minimal research had been conducted on the efficacy of lower concentrations. Unpublished data from the Denver Wildlife Research Centre showed no loss in efficacy when black-tailed prairie dogs (*Cynomys ludovicianus*) and deer mice (*Peromyscus maniculatus*) were fed concentrations lower than the registered level of 0.11%. For example, 100% of the prairie dogs and deer mice died after feeding on 0.022% and 0.0315% 1080 baits, respectively. In the present laboratory study 1080 baits as low as 0.022% resulted in 100% mortality to prairie dogs when they were fed a restricted amount, 2.5.g, or fed *ad libitum*. In secondary feeding tests 12 groups of domestic ferrets (*Mustela putorius furo*) each containing 5 males and 5 females were fed control (euthanized with CO_2) or 1080-treated tissue (whole body, muscle, or internal organs) from prairie dogs killed by feeding on 10.g of either 0.022%, 0.35%, or 0.113% 1080 baits. The baits were offered for a 24-hour period with alternate food available. After 3 consecutive days of feeding on these tissues, the ferrets were observed for 14 days. The only ferret that died was a male that fed on internal organs from prairie dogs that ate 0.113% bait. Gross toxicological symptoms were observed in 5 ferrets that feed on internal organs and in 1 ferret that fed on whole body tissue from the 0.113% 1080-treated prairie dogs. One ferret that fed on internal organs from the 0.035% 1080-treated prairie dogs also developed gross toxicological symptoms; however, all 7 affected animals fully recovered. No gross toxicological symptoms were observed in any of the ferrets that consumed tissues from prairie dogs killed with the 0.022% 1080 bait. This concentration (.022%) represents an 80% reduction of 1080 when compared to the previously registered 0.11% concentration.

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